

(PCT Article 36 and Rule 70)

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/IP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/012301

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:

- ☐ international search (Rule 12.3 and 23.1(b))
☐ publication of the international application (Rule 12.4)
☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-12 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. _____ as originally filed/furnished

nos.* 1-15 as amended (together with any statement) under Article 19

nos.* _____ received by this Authority on _____

nos.* _____ received by this Authority on _____

☒ the drawings:

sheets fig. 1-2 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/012301

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-15	YES
	Claims		NO
Inventive step (IS)	Claims	1-15	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

(1) Novelty and Inventive Step

The inventions set forth in claims 1 to 15 are not disclosed in any of the documents that are cited in the international search report; therefore, the inventions in question are novel.

In particular, the documents in question do not disclose the feature wherein a forked function is divided into a first range, which is in the vicinity of the peak, and a fringe section, which does not include said first range; said first range is substituted with a cubic function; and said fringe section is treated as a forked function, which is then calculated in prescribed ranges that have equal intervals, whereafter the area in the vicinity of the peak within the first range is replaced with a cubic function and the fringe section of the first range is treated as a function of the difference between the forked function and the cubic function, which is then calculated using second prescribed intervals that are narrower than the aforementioned first prescribed intervals.

Furthermore, the inventions set forth in claims 1 to 15 involve an inventive step in relation to the documents that are cited in the international search

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/012301

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

report. In particular, the inventions that are set forth in the present application exhibit an advantageous effect in that it is possible to accelerate line-by-line calculations as a result of employing the abovementioned feature.

(2) Industrial Applicability

The inventions set forth in claims 1 to 15 exhibit industrial applicability in that said inventions can be used to accelerate the line-by-line calculations for spectrums that comprise a plurality of absorption lines.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/012301

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The Japanese language disclosure "K(x, y) f(x) ga de aru," as set forth in claim 10, is grammatically incorrect.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/012301

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 3 and 15

Claims 3 and 15 do not clearly indicate the manner in which the results that are calculated in stage (6) will be reflected in the subsequent iterations of stages (4) to (6); therefore, from a technical standpoint it is unclear how simply repeating stages "(4) to (7)" will make it possible to "determine a third prescribed interval."

2. Claims 5 and 6

Claims 5 and 6 include the expression "approximately $\gamma / 4$," which only vaguely defines the scope of the inventions that are set forth therein.

3. Claims 9 to 11

Forked functions comprise only one complex variable as an argument, and thus the meaning of the disclosure "variable y " is unclear (that is to say, the fact that y represents the imaginary section of the aforementioned complex variable is only set forth in claim 12).